IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please amend claims 1-16 according to the following:

1. (currently amended) A model optimization apparatus, comprising:

a detection unit detecting one or more redundant ~~shapes~~ attributes from a plurality of ~~shapes~~ attributes forming a three-dimensional model of an object by comparing ~~shape~~ attribute coordinates, and generating a list of ~~shapes~~ attributes to be deleted and a list of ~~shapes~~ attributes to be amended among the one or more redundant ~~shapes~~ attributes responsive to the coordinate based comparison;

a deletion unit deleting ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be deleted, and amending ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be amended; and

a construction unit reconstructing a three-dimensional model of the object according to remaining ~~shape~~ attribute information including the amended ~~shape~~ attribute information and ~~shape~~ attribute information of ~~shapes~~ attributes other than the one or more redundant ~~shapes~~ attributes.

2. (currently amended) The apparatus according to claim 1, wherein:

said detection unit detects an unnecessary ~~shape~~ attribute not contributing to an outline of the three-dimensional model from the plurality of ~~shapes~~ attributes; and

said deletion unit deletes the ~~shape~~ attribute information about the unnecessary ~~shape.~~ attribute.

3. (currently amended) The apparatus according to claim 2, wherein: said detection unit detects two ~~shapes~~ attributes having same outline information and offsetting each other; and said deletion unit deletes the two ~~shapes~~ attributes.

4. (currently amended) The apparatus according to claim 2, wherein:

said detection unit detects two ~~shapes~~ attributes having different outline information and offsetting each other; and

said deletion unit deletes the two ~~shapes~~ attributes.

5. (currently amended) The apparatus according to claim 1, wherein:

said detection unit detects two or more ~~shapes~~ attributes which can be represented by one ~~shape~~ attribute from the plurality of ~~shapes~~ attributes; and

said deletion unit integrates ~~shape~~ attribute information of the two or more ~~shapes~~ attributes into ~~shape~~ attribute information of the one ~~shapes~~ attributes.

6. (currently amended) The apparatus according to claim 5, wherein:

said detection unit detects two ~~shapes~~ attributes having same sectional ~~shape~~ attribute information; and

said deletion unit deletes ~~shape~~ attribute information of one of the two ~~shapes~~ attributes, amends ~~shape~~ attribute information of the other ~~shape~~ attribute, and integrates ~~shape~~ attribute information of the two ~~shapes~~ attributes into ~~shape~~ attribute information of one ~~shape.~~ attribute.

7. (currently amended) The apparatus according to claim 5, wherein: said detection unit detects two ~~shapes~~ attributes having same height information; and

said deletion unit deletes ~~shape~~ attribute information of one of the two ~~shapes~~ attributes, amends ~~shape~~ attribute information of the other ~~shape~~ attribute, and integrates ~~shape~~ attribute information of the two ~~shapes~~ attributes into ~~shape~~ attribute information of one ~~shape.~~ attribute.

8. (currently amended) The apparatus according to claim 5, wherein:

said detection unit detects two or more ~~shapes~~ attributes having a same arrangement plane information and same height information; and

said deletion unit amends ~~shape~~ attribute information of one of the two or more ~~shapes~~ attributes, deletes ~~shape~~ attribute information of other ~~shapes~~ attributes, and integrates ~~shape~~ attribute information of the two or more ~~shapes~~ attributes into ~~shape~~ attribute information of one ~~shape.~~ attribute.

9. (currently amended) The apparatus according to claim 5, wherein: said detection unit detects two or more ~~shapes~~ attributes defined as pattern attributes; and

said deletion unit amends ~~shape~~ attribute information of one of the two or more ~~shapes~~ attributes, deletes ~~shape~~ attribute information of other ~~shapes~~ attributes, and integrates ~~shape~~ attribute information of the two or more ~~shapes~~ attributes into ~~shape~~ attribute information of one ~~shape.~~ attribute.

10. (currently amended) The apparatus according to claim 1, wherein:

said detection unit comprises:

a deletion target storage unit storing the list of the ~~shapes~~ attributes to be deleted; and

an amendment target storage unit storing the list of the ~~shapes~~ attributes to be amended.

11. (currently amended) The apparatus according to claim 10, wherein

said deletion unit amends the ~~shape~~ attribute information of the ~~shapes~~ attributes to be amended according to at least one of vertex coordinate information and height information included in deleted ~~shape~~ attribute information.

12. (currently amended) The apparatus according to claim 1, wherein

said construction unit comprises a unit for amending arrangement reference information included in the remaining ~~shape~~ attribute information, and reconstructs the three-dimensional model according to the amended arrangement reference information.

13. (currently amended) The apparatus according to claim 1, wherein

said construction unit comprises a unit for generating a pseudo ~~shape~~ attribute corresponding to arrangement reference information included in the remaining ~~shape~~ attribute information, and reconstructs the three-dimensional model using the pseudo ~~shape~~ attribute without amending the arrangement reference information.

14. (currently amended) A computer-readable storage medium storing a program used to direct a computer to perform:

detecting one or more redundant ~~shapes~~ attributes from a plurality of ~~shapes~~ attributes forming a three-dimensional model of an object by comparing ~~shape~~ attribute coordinates, and generating a list of ~~shapes~~ attributes to be deleted and a list of ~~shapes~~ attributes to be amended among the one or more redundant ~~shapes~~ attributes responsive to the coordinate based comparison;

deleting ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be deleted, and amending ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be amended; and

reconstructing a three-dimensional model of the object according to remaining ~~shape~~ attribute information including the amended ~~shape~~ attribute information and ~~shape~~ attribute information of ~~shapes~~ attributes other than the one or more redundant ~~shapes~~ attributes.

15. (currently amended) A method of optimizing a model, comprising:

automatically detecting one or more redundant ~~shapes~~ attributes from a plurality of ~~shapes~~ attributes forming a three-dimensional model of an object by comparing ~~shape~~ attribute coordinates, and generating a list of ~~shapes~~ attributes to be deleted and a list of ~~shapes~~ attributes to be amended among the one or more redundant ~~shapes~~ attributes responsive to the coordinate based comparison;

automatically deleting ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be deleted, and amending ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be amended; and

automatically reconstructing a three-dimensional model of the object according to remaining ~~shape~~ attribute information including the amended ~~shape~~ attribute information and ~~shape~~ attribute information of ~~shapes~~ attributes other than the one or more redundant ~~shapes~~ attributes.

16. (currently amended) A model optimization apparatus, comprising:

detection means for detecting one or more redundant ~~shapes~~ attributes from a plurality of ~~shapes~~ attributes forming a three-dimensional model of an object by comparing ~~shape~~ attribute coordinates, and generating a list of ~~shapes~~ attributes to be deleted and a list of ~~shapes~~ attributes to be amended among the one or more redundant ~~shapes~~ attributes responsive to the coordinate based comparison;

deletion means for deleting ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be deleted, and amending ~~shape~~ attribute information of ~~shapes~~ attributes in the list of the ~~shapes~~ attributes to be amended; and

construction means for reconstructing a three-dimensional model of the object according to remaining ~~shape~~ attribute information including the amended ~~shape~~ attribute information and ~~shape~~ attribute information of ~~shapes~~ attributes other than the one or more redundant ~~shapes~~ attributes.